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AUTHOR Sassenrath, Julius M.; Maddux, Robert E.
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ABSTRACT

In order to evaluate the effectiveness of three language development programs, 98 disadvantaged kindergarten children were grouped by sex, language background (English or English and Spanish), and language instruction (Distar, Peabody, or Standard) and were pretested and posttested on the School Readiness Survey (SRS), the Wepman Auditory Discrimination Test (WADT), and the Illinois Test of Psycholinguistic Abilities (ITPA). A two by three analysis of covariance (covarying for pretest) was computed on each of the subtests of the SRS, WADT, and ITPA. The results for each of the subtests did not show consistent significant differences due to sex, language background, or language instruction. However, t-tests for correlated means indicated that irrespective of instruction, sex, or background the children showed improvement from pretest to posttest on almost all of the subtests of the SRS, WADT, and ITPA. Thus, intensive language development programs in kindergarten appear to be beneficial for disadvantaged children. (Author/JM)

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LANGUAGE INSTRUCTION, BACKGROUND, AND DEVELOPMENT OF DISADVANTAGED KINDERGARTEN CHILDREN[1]

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JULIUS M. SASSENRATH
and
ROBERT E. MADDUX

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Ninety-eight disadvantaged kindergarten children were grouped by sex, language background (English or English and Spanish), and language instruction (Distar, Peabody or Standard) and were pretested and posttested on the School Readiness Survey (SRS), the Wepman Auditory Discrimination Test (WADT) and the Illinois Test of Psycholinguistic Abilities (ITPA). A 2 by 3 analysis of covariance (covarying for pretest) was computed on each of the subtests of the SRS, WADT, and ITPA. The results for each of the subtests did not show consistent significant differences due to sex, language background, or language instruction. However, t-tests for correlated means indicated that irrespective of instruction, sex, or background the children showed improvement from pretest to posttest on almost all of the subtests of the SRS, WADT, and ITPA. Thus, intensive language development programs in kindergarten appear to be beneficial for disadvantaged children.

As Krech (1969) has suggested, human language with its complex and abstract structure is the best possible example of a species-specific behavior if one can be found in the human race. However, even if language is species-specific to the human race it certainly does not develop without stimulation, practice, or enrichments. Witness the clinical report (Davis, 1949, p. 204) of Anna who was raised to age 6 in isolation and squalor in one room with minimal care and attention. At that age she could not walk, gesture, or speak. Although her hearing and vision were normal she did not really learn to speak much until age 10. At that age she could call people by name and she learned short sentences to express her needs. However, she did not carry on a conversation like a normally raised ten-year-old. Davis points out that Anna could have been congenitally retarded, but it is very likely that she would have been near-normal

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Julius M. Sassenrath is Chairman of the Department of Education at the University of California, Davis, where he has been for the past ten years. Prior to his present position he taught in the Richmond School District, California State University, San Francisco and Indiana University. He is the author of more than forty articles and monographs. He received his bachelor, masters and his doctorate degrees from the University of California, Berkeley.

Robert E. Maddux is completing his fourth year as Coordinator of Federal and Special Programs in the Woodland Joint Unified School District. Prior to his present position, he served six years as a language development specialist in the same district. He received the bachelor degree at the University of Northern Colorado in 1962.

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mentally and linguistically at an earlier age had she been raised in a more enriched social environment.

Consequently, even less severely disadvantaged children when provided an enriched language experience might develop faster linguistically and in other areas of their mental development. Jensen (1969, pp. 104-109) in one of his most provocative articles points out that where small intensive preschool programs, of at least one year duration, put emphasis on the cognitive and linguistic development of children that there are small but real gains in IQ scores and in scholastic achievement when the program emphasizes learning such skills.

One of the greatest deficiencies of disadvantaged children may be their lack of vocabulary development. Frost (1967) found that Arkansas Anglo migrant children of age 15 or 16 had essentially the same vocabulary level as advantaged children of ages 5 or 6. Luria (1969) points out that in addition to the semantic and syntactic function of speech in controlling one's intellectual behavior, words also permit a child to control the behavior of others. Frequently, the environment from which the lower socio-economic child comes has not prepared him well for the verbal experiences of a linguistically different environment such as the usual classroom. Cazden (1966) reveiwed a large number of studies from the viewpoint of the three major aspects of language development: vocabulary, phonology, and grammar. The studies showed clearly that upper or middle socio-economic children are more advanced, on all measures, than lower socio-economic children, however defined. Since most public school classrooms and text materials tend to assume a middle-class standard English language, it appears that children from low socio-economic homes would have some difficulty unless some special intervention was made. One intervention that could be made, that is based upon principles of research mentioned above, is to provide a stimulating language learning program for children from lower socio-economic areas.[2]

The primary purpose of this study was to evaluate the effectiveness of three language development programs for disadvantaged kindergarten children. The three language programs were: (1) Distar; (2) Peabody; and (3) Standard. The secondary purposes of the study were: (1) to determine if monolingual (English) or bilingual (English and Spanish) children do better with any of the three language development programs: (2) to determine if boys or girls do better with any of the three programs; and (3) to determine if there were gains in language development irrespective of sex and language background.

2. *Of course, an entirely different accomodation that could be made is to provide instruction and teaching materials in non-standard English, and have educational goals that are in keeping with the abilities and interests of the children.*

METHOD

Design

The design of the study was a 3 (language instruction) by 2 (monolingual or bilingual) by 2 (boys or girls) analysis of covariance with pretest scores as the covariate. The pretest and posttest variables consisted of measures obtained on the School Readiness Survey (SRS), the Wepman Auditory Discrimination Test (WADT), and the Illinois Test of Psycholinguistic Abilities (ITPA). The SRS consisted of 7 subtests and a total score; the WADT of 2 subtest scores; and the ITPA of 10 subtests and a total score. The data on each of the 21 dependent variables were then subjected to a 3 by 2 by 2 analysis of covariance with a correction for unequal sample size in the cells of the design. The covariance design adjusts each child's posttest score depending upon the magnitude of his pretest score and the correlation between the pretest and posttest scores for each variable. In effect, the covariance design attempts to equate the children on the pretest.

Subjects

The *S*'s were 98 children from economically and educationally disadvantaged neighborhoods in a small city-rural school district. Fifty-three of the *S*'s were boys and forty-five were girls enrolled in the kindergarten in 7 elementary schools. Fifty-five of the pupils were monolingual (English) and forty-three were bilingual (English and Spanish). Any child who was not enrolled for the entire school day was eliminated from the study. As a result, 20 other children could not be included in the study.

Materials and Procedures

The children were in 11 classrooms with 11 monolingual experienced teachers and 6 experienced bilingual teacher aides who spent 2 hours a day in each classroom. Each teacher was able to select and use one of the three language development programs that she preferred. This arrangement should have made it possible for each teacher to work at her best.

The Distar Language Program at the Kindergarten level consisted of 180 thirty-minute daily lessons that concentrates on 22 basic language concepts. These concepts are then used in a systematic way in the storybook. At the end of each of the 180 lessons there were pictures that were given to the children to take home. A coloring book was used to teach, in addition to the basic colors, various geometrical shapes and patterns. The Distar method also stresses positive reinforcement from the teacher both verbally and nonverbally.

The Peabody Language Development Program consisted of 180 lessons of about forty-minutes duration. These lessons stress a total language program rather than specific training in selected psycholinguistic processes. The three aspects of oral language were stressed: expression, reception, and conceptualization. Expression covers both verbal and motor. Reception is provided through sight, sound

and touch only. Conceptualization includes convergent, divergent, and associative thinking.

The Standard Method Language Development incorporates language skill into daily activities of the language arts areas of speaking, reading (readiness), listening, and writing (readiness). Teachers use their professional training and knowledge to capitalize on numerous situations during the day to assist children in these skills. Generally, the teacher considered how to develop these skills as she planned the activities of the day; the emphasis is on offering activities that enable children to develop skills at each individual's rate of development. Sample activities such as, games, stories, exercises, etc., for all the language concepts are included in the kindergarten teachers' guide. The Standard method is probably the least structured and the Distar is probably the most structured.

All of the children were pretested in September and posttested in May on the SRS, WADT, and ITPA. The teachers, teacher aides, and other school personnel administered all the tests. A descriptive name for each subtest is presented in Table 1.

RESULTS

Table 1 presents the means and standard deviations on the pretests, posttests, and gain scores for the subtests and total scores of the SRS, WADT, and ITPA, for all 98 children. Notice that for each subtest and total score there was a gain, although small in some instances, in the mean scores from pretest to posttest. That was also

TABLE 1

Means and Standard Deviations on the Pretest, Posttest, and Gains for the Scores on the School Readiness Survey, the Wepman Auditory Discrimination Test, and the Illinois Test of Psycholinguistic Abilities.

Test & Subtests	Pretest Mean	Pretest S.D.	Posttest Mean	Posttest S.D.	Gain Mean	Gain S.D.
Sch. Read. Sur.						
Num. Conc.	7.04	2.67	8.91	1.63	1.88*	2.13
Form Dis.	8.28	2.43	9.86	1.51	1.50*	2.45
Color Nam.	5.04	2.36	6.33	1.46	1.29*	1.97
Sym. Match.	13.39	2.10	15.10	2.04	1.71*	2.58
Speak. Voc.	12.66	3.14	14.14	2.75	1.48*	2.61
Instr. Voc.	8.01	2.39	9.86	1.79	1.81*	2.44
Gen. Info.	12.80	4.01	15.62	3.53	2.83*	2.65
Total Score	67.26	12.28	79.86	11.28	12.61*	9.37
Wep. Aud. Dis.						
Error Diff.	13.69	7.14	9.44	6.85	-4.26*	9.39
Error Sim.	4.73	3.82	2.50	3.39	-2.26*	4.69
I. T. P. A.						
Aud. Recep.	17.17	5.68	20.20	6.39	3.03*	5.70
Vis. Recep.	13.71	4.47	17.25	4.52	3.53*	5.06
Aud. Assoc.	14.70	6.03	18.02	5.07	3.34*	4.23
Vis. Assoc.	15.09	4.58	19.20	3.70	4.11*	4.18
Verb. Expr.	11.55	4.77	15.40	5.41	3.85*	5.23
Man. Expr.	17.81	4.50	19.08	4.50	1.28	4.64
Gram. Clos.	8.39	4.62	11.13	4.86	2.75*	3.21
Vis. Clos.	13.28	4.07	18.94	4.30	5.66*	4.37
Aud. Seq.	18.67	7.91	21.34	8.04	2.66*	3.75
Vis. Seq.	10.33	5.02	15.41	3.67	5.07*	4.98
Total Score	140.71	33.39	175.13	28.12	34.42*	17.41

*p .05

true for the WADT since there was a reduction in the number of errors. All of the mean gains are statistically significant except for Manual Expression, and manual expression was not emphasized in the language instruction programs.

Table 2 shows the posttest means on all 21 measures when all the children were classified by sex, method of instruction, and language background. These were the means used in the 2 by 3 by 2 analysis of covariance performed on each of the test scores. Only those means that were statistically significant will be interpreted in the text; the non-significant mean differences will not be mentioned.

TABLE 2

Posttest Means by Sex, Method, and Language Background for the Scores on the School Readiness Survey, the Wepman Auditory Discrimination Test, and the Illinois Test of Psycholinguistic Abilities.

Test &	Sex		Method			Language	
Subtests	Male	Female	Stand.	Peabody	Distar	Monol.	Bil
Sch. Read. Sur.							
Num. Conc.	8.42	9.49	9.29	8.31	9.03	8.93	8.88
Form. Dis.	9.68	10.07	10.00	9.52	10.00	9.76	9.98
Color Nam.	6.04	6.67	6.56	6.17	6.23	6.36	6.28
Sym. Match.	14.81	15.44	15.29	14.66	15.29	15.00	15.23
Speak. Voc.	15.43	13.80	14.47	12.69	15.03	14.66	13.49
Hear. Voc.	10.00	9.69	10.12	9.38	10.00	10.07	9.58
Gen. Info.	15.30	16.00	16.15	14.28	16.23	16.36	14.67
Total Score	78.42	81.56	81.97	75.03	81.80	81.06	78.33
Wep. Aud. Dis.							
Error Diff.	9.95	8.84	6.77	13.03	9.06	9.76	9.02
Error Sim.	2.88	2.02	1.68	4.45	1.66	2.47	2.51
I. T. P. A.							
Aud. Recp.	20.93	19.36	21.32	18.97	20.14	21.69	18.30
Vis. Recep.	17.15	17.36	16.82	17.62	17.34	17.31	17.16
Aud. Assoc.	18.34	17.64	19.71	16.86	17.34	19.66	16.93
Vis. Assoc.	19.42	18.96	19.56	18.76	19.23	19.06	19.40
Verb. Expr.	15.03	15.91	15.97	16.52	13.91	17.29	12.98
Man. Expr.	19.23	18.91	22.29	18.76	17.20	19.78	18.19
Gram. Clos.	11.21	11.04	12.65	10.14	10.49	10.82	8.98
Vis. Clos.	18.00	20.04	18.50	17.83	20.29	18.35	19.70
Aud. Seq.	20.17	22.71	22.68	20.01	21.09	21.70	20.88
Vis. Seq.	15.07	15.80	15.12	15.93	15.26	14.82	17.16
Total Score	173.85	176.64	182.12	171.79	171.09	182.47	165.74

There was a significantly higher mean score for boys than girls on the variable Speaking Vocabulary ($F = 4.55$; df = 1 & 86, $p < .05$). However, the girls had a slightly but not significantly better score on almost all of the other variables on the SRS and WADT. There were no reliable differences, nor even consistently slight differences, favoring either the girls or boys on the ITPA scores.

On methods of language instruction there was a significant difference in favor of the Standard and Distar programs on the variables Speaking Vocabulary ($F = 7.83$; $df = 2$ & 86; $p < .05$), errors in Auditory Differences ($F = 7.83$; $df = 2$ & 86; $p < .05$), and errors in Auditory Similarities ($F = 10.74$; $df = 2$ & 86; $p < .05$). Generally,

the scores on the other variables of the SRS and WADT were slightly lower for the Peabody than the other programs. There was one reliable difference on the ITPA due to method of language instruction and that one favored the Standard program on the measure of Manual Expression ($F = 3.52$; $df = 2$ & 86; $p < .05$). Also, there were no slight but consistent mean differences favoring one method or the other on the remaining variables of the ITPA.

For the main effect due to language background there were no significant nor even consistently small mean differences favoring either monolingual or bilingual children on the SRS or the WADT. On the ITPA there were reliable differences favoring the monolingual children on Verbal Expression ($F = 7.43$; $df = 1$ & 86; $p < .05$) and the bilingual children on Visual Sequencing ($F = 4.08$; $df = 1$ & 86, $p < .05$). For most of the other variables of the ITPA there was a very slight difference favoring the monolingual children.

As far as the two-way interactions were concerned, on the sex by method interaction, the boys did significantly better with the Standard and Peabody programs on the variable Speaking Vocabulary than did any of the other 5 groups ($F = 4.04$; $df = 2$ & 86; $p < .05$). On the variable Errors in Auditory Differences the girls made reliably fewer errors on the Standard and Distar while the boys made fewer errors with the Peabody ($F = 5.41$; $df = 2$ & 86; $p < .05$). On the variable Errors in Auditory Similarities the sex by method interaction indicated that the girls did better with the Standard than any of the other sex by methods groups ($F = 8.28$; $df = 2$ & 86, $p < .05$).

On the sex by language interaction none of the differences were significant. On the interaction of method by language background, one of the significant differences favored the Standard program for the bilingual group over the other groups on the variable Errors in Auditory Differences ($F = 5.28$; $df = 2$ & 86; $p < .05$). A second methods by language interaction favored the Peabody with the bilingual children where there was fewer Errors in Auditory Similarities than for any of the other five groups ($F = 7.19$; $df = 2$ & 86; $p < .05$). The third significant method by language interaction showed that the monolingual children with the Standard and Peabody programs did better in Verbal Expression than the other groups ($F = 3.63$; $df = 2$ & 86; $p < .05$). The three-way interactions for the SRS, WADT, and ITPA were based upon so few children in some of the subgroups and were so difficult to interpret that no attempt was made to make sense out of them.

DISCUSSION

Irrespective of methods of language instruction, sex, or language background, the children showed some improvement on almost every one of the 21 measures on the SRS, WADT, and the ITPA used in this study. Thus, intensive language instruction in kindergarten appears to be beneficial for economically disadvantaged children in terms of school readiness, auditory discrimination, and psycho-

linguistic abilities. Reviews of intensive language development programs for young disadvantaged children have been shown to be slightly superior to those emphasizing social or motor development as far as immediate intellectual development and school readiness is concerned (Hodges & Spicker, 1967; Jensen, 1969; Karnes, Teska & Hodgins, 1970). This is what one would expect. On the other hand, there are reviews of the brief evidence and arguments available that early childhood education, stressing intellectual activities, does not have any long lasting beneficial effect, at least, for economically advantaged children (Elking, 1969; Rohwer, 1971). Whether or not economically and educationally disadvantaged children would receive lasting benefit from intensive intellectual development programs needs to be researched more fully in terms of its longitudinal or long-term effects.

However, Baratz and Baratz (1970), Hamilton (1968), and Sroufe (1970) have argued why do economically disadvantaged and, particularly ethnic minorities, have to conform to more middle-class white standards with regard to educational goals, language, and cultural background. One answer is that these middle class standards should not be imposed upon all lower-class or ethnic minority peoples. However, ethnic groups (white included) that are bilingual and bicultural have the potential for a richer quality of life than those who are monolingual and monocultural peoples, regardless of their race or ethnic background. The result might be a reduction in economic deprivation because of better education, training, and communication among all groups. Ideally, another result would be the elimination of the concept of culturally disadvantaged and the substitution of the concept of culturally different.

The results of this study indicated that the Distar and/or Standard programs were only slightly better than the Peabody program on a few measures dealing with Speaking Vocabulary, Auditory Discrimination, and Manual Expression. Actually, it does not appear that either the Distar, Standard, or Peabody language development program is uniformly superior for educationally disadvantaged kindergarteners when their performance is measured on the subtests of the SRS, WADT, or ITPA.

As far as language background is concerned, the monolingual children did reliably better on Verbal Expression while the bilingual children did better on Visual Sequencing. Thus, it appears that the predominant use of English by the monolingual children facilitates their performance in verbal communication. On the other hand, training in two languages appeared to facilitate performance in visually processing graphic stimuli for the bilingual children. In general, the monolingual children did slightly, but not reliably, better on most of the other measures of the ITPA. Thus, it appears that although the monolingual children did a little better, the bilingual children did practically as well. Consequently, the three language programs appear to be suitable, in the hands of an experienced kindergarten teacher, for disadvantaged children who are monolingual or bilingual.

The results of this study indicated that the boys were reliably higher than the girls in Speaking Vocabulary. This result is out of keeping with the usual finding that more advantaged boys and girls show, in general, very similar scores on most vocabulary tests (Tyler, 1965, p. 244). The girls had slightly but not significantly better scores on almost all of the other measures on the SRS and WADT but not on the ITPA.

None of the interactions between method, language background, and sex were consistently significant on enough of the criterion measures to warrant any interpretations or conclusions.

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